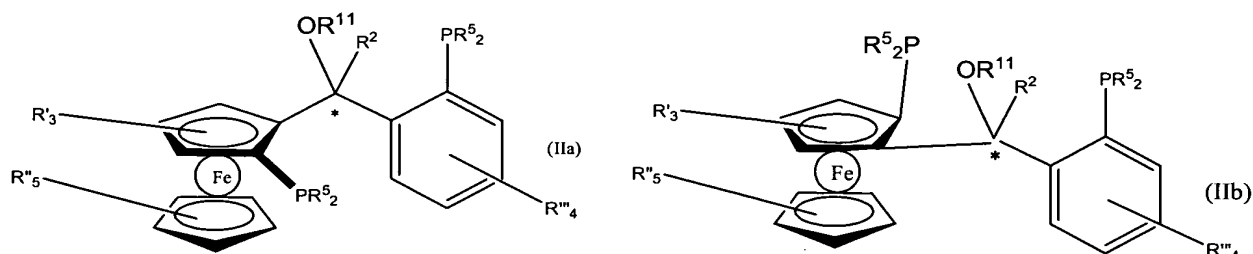


## IN THE CLAIMS

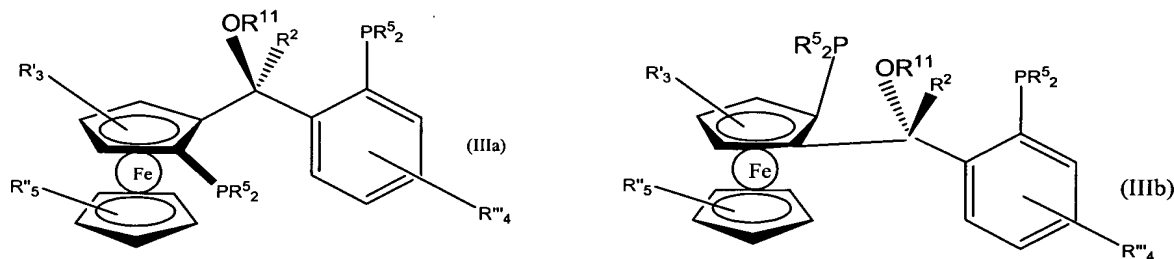
Please amend the claims as follows:

Claim 1 (Currently Amended): A ferrocenyl ligand of the general formula (II)



characterized in that wherein

the  $S_{fc},S$  enantiomer of the formula (IIIa) is present in excess in the stereoisomer mixture (IIa) or the  $R_{fc},R$  enantiomer of the formula (IIIb) is present in excess in the stereoisomer mixture (IIb)



and

$R'$  and  $R''$  are radicals which can be ~~selected~~ independently selected from the group consisting of  $H$ ,  $CH_3$  and mixtures thereof or can be a linker which connects the ligands to a polymeric support and the radicals,

$R'''$  are radicals which can be ~~selected~~ independently selected from the group consisting of  $H$ ,  $(C_1-C_4)$ -alkyl and mixtures thereof and the radicals,

$R^5$  can be, independently of one another, radicals selected from the group consisting of  $C_6$ -aryl,  $C_5-C_6$ -cycloalkyl, adamantyl, ~~and~~  $C_1-C_4$ -alkyl and mixtures thereof, where the radicals  $R^5$  may bear one or more  $(C_1-C_4)$ -alkyl substituents and

$R^2$  is hydrogen or a (C<sub>1</sub>-C<sub>4</sub>)-alkyl radical and

$R^{11}$  is a (C<sub>1</sub>-C<sub>4</sub>)-alkyl radical.

Claim 2 (Currently Amended): The ferrocenyl ligand as claimed in claim 1,  
~~characterized in that~~ wherein

$R^{11}$  is a methyl radical and/or

$R^2$  is H or a methyl radical and/or

$R'$ ,  $R''$ ,  $R'''$  are hydrogen radicals and/or the radicals

$R^5$  are, independently of one another, phenyl, tolyl or xylyl radicals.

Claim 3 (Currently Amended): The ferrocenyl ligand as claimed in either claim 1 ~~or~~  
~~2, characterized in that~~ wherein the  $S_{fc},S$  enantiomer or the  $R_{fc},R$  enantiomer is present in the  
stereoisomer mixture in a proportion of over 60%.

Claim 4 (Currently Amended): The ferrocenyl ligand as claimed ~~in any of claims 1~~  
~~to 3, characterized in that~~ claim 1 wherein the ligand is present as  $S_{fc},S$  enantiomer or as  $R_{fc},R$   
enantiomer having a purity of over 99%.

Claim 5 (Currently Amended): ~~The use of ferrocenyl ligands as claimed in any of~~  
~~claims 1 to 4~~ A process for preparing complexes a complex comprising forming the complex  
with the ferrocenyl ligands as claimed in claim 1.

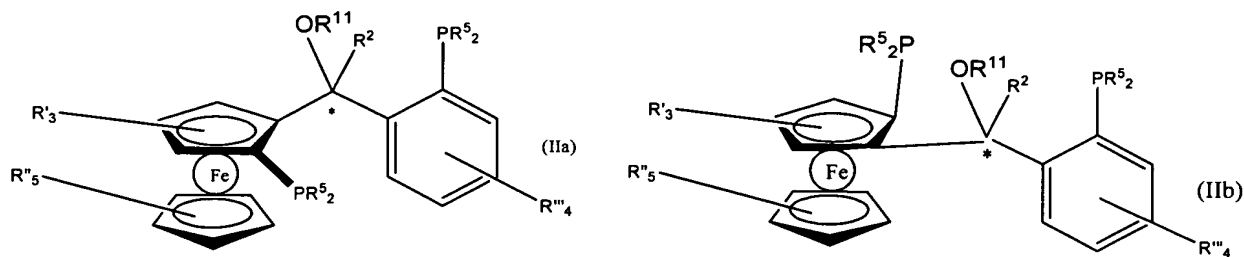
Claim 6 (Currently Amended): ~~The use of ferrocenyl ligands as claimed in claim 5~~ A  
process for preparing complexes a complex with metals, metal salts or metal precomplexes of  
transition group 7 or 8 comprising forming the complex with the ferrocenyl ligands as

claimed in claim 1 with at least one metal, metal salt or metal precomplex selected from the group consisting of transition group 7 or and 8.

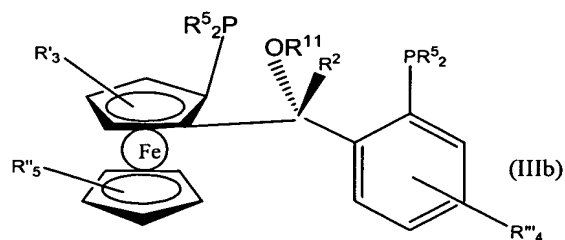
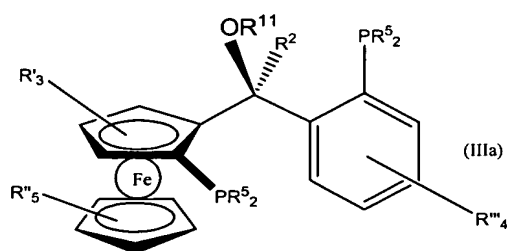
Claim 7 (Currently Amended): ~~The use of ferrocenyl ligands as claimed in any of claims 1 to 4 in~~ A process for the asymmetric hydrogenation or hydroformylation of unsaturated organic compounds comprising hydrogenating or hydroformylating unsaturated organic compounds in the presence of the ferrocenyl ligands as claimed in claim 1.

Claim 8 (Currently Amended): ~~The use of ferrocenyl ligands as claimed in claim 7 in~~ A process for the asymmetric hydrogenation of C=C, C=O or C=N bonds comprising hydrogenating C=C, C=O or C=N bonds in the presence of the ferrocenyl ligands as claimed in claim 1.

Claim 9 (Currently Amended): A process for preparing ferrocenyl ligands of the general formula (II)



where the  $S_{fc},S$  enantiomer of the formula (IIIa) is present in excess in the mixture (IIa) or the  $R_{fc},R$  enantiomer of the formula (IIIb) is present in excess in the mixture (IIb)



and

$R'$  and  $R''$  can each be, independently of one another, a substituent selected from the group consisting of  $H$ , and  $(C_1-C_4)$ -alkyl and mixtures thereof or a linker which connects the ligands to a polymeric support and the radicals

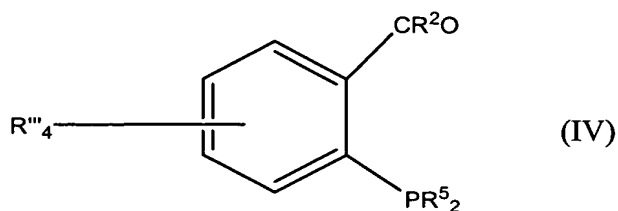
$R'''$  are radicals which can be ~~selected~~ independently selected from the group consisting of  $H$ ,  $(C_1-C_{18})$ -alkyl,  $(C_1-C_{18})$ -alkoxy,  $(C_1-C_{18})$ -acyloxy,  $(C_6-C_{14})$ -aryl,  $(C_3-C_{18})$ -heteroaryl,  $(C_2-C_{17})$ -heteroalkyl,  $(C_3-C_8)$ -cycloalkyl, and  $(C_2-C_{10})$ -alkenyl and mixtures thereof, where two adjacent radicals may also be joined to one another to form a ring system, and the radicals

$R^5$  can each be, independently of one another, selected from the group consisting of  $(C_1-C_{18})$ -alkyl,  $(C_6-C_{18})$ -aryl,  $(C_6-C_{18})$ -aryl- $(C_1-C_8)$ -alkyl,  $(C_3-C_{18})$ -heteroaryl,  $(C_3-C_{18})$ -heteroaryl- $(C_1-C_8)$ -alkyl,  $(C_2-C_{17})$ -heteroalkyl,  $(C_3-C_8)$ -cycloalkyl,  $(C_3-C_8)$ -cycloalkyl- $(C_1-C_8)$ -alkyl,  $(C_2-C_{10})$ -alkenyl radicals and mixtures thereof which may bear one or more  $(C_1-C_4)$ -alkyl substituents and the radical

$R^2$  is  $H$  or a  $(C_1-C_8)$ -alkyl radical,  $(C_6-C_{18})$ -aryl,  $(C_6-C_{18})$ -aryl- $(C_1-C_8)$ -alkyl radical and the radical

$R^{11}$  can be a  $(C_1-C_{18})$ -alkyl,  $(C_6-C_{18})$ -aryl,  $(C_6-C_{18})$ -aryl- $(C_1-C_8)$ -alkyl radical, which comprises the process steps:

a) coupling of a chiral ferrocenyl sulfoxide with an aromatic aldehyde of the formula (IV),



with the chiral ferrocenyl sulfoxide being lithiated in the presence of a lithium base and the coupling of the aromatic aldehyde subsequently being carried out by transmetallation in the presence of a metal catalyst of transition group 8,

b) coupling of the free OH group on the chiral center of the reaction product from step a) with an organic radical  $R^{11}$  by addition of the corresponding halide  $R^{11}\text{Hal}$  in the presence of an alkali metal hydride and

c) replacement of the sulfoxide group of the reaction product from step b) in the presence of a strong lithium base by a phosphorus halide of the formula  $\text{HalPR}^5_2$ .

Claim 10 (Currently Amended): The process as claimed in claim 9, ~~characterized in that wherein~~ the diastereomers obtained from step a) and/or the diastereomers from step b) are separated prior to being reacted further.